# Navy Medical Lessons Learned

Joint Lessons Learned Information System

NUMBER 26

# Newsletter

SPRING 2013

**Naval Medical Lessons Learned Center**

**NMLLC Website**

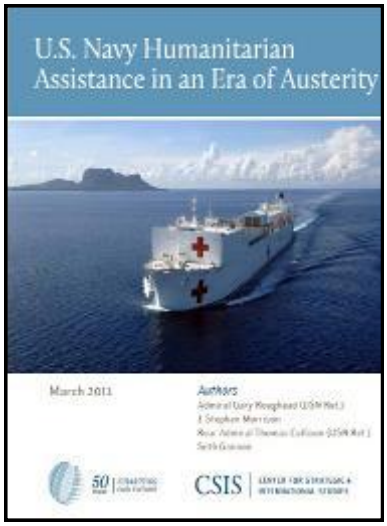
**"Learning from those who have gone before."**

## Inside this issue:



The Naval Medical Lessons Learned Center (NMLLC) newsletter is an "initial impression" summary that identifies key observations and potential lessons from various collection efforts. These observations highlight potential shortfalls, risks or issues experienced by units that may suggest a need for change. The observations are not service-level decisions. In addition, some information in this newsletter has been compiled from publicly available sources and is not official Navy policy. Although the information has been gathered from reliable sources, the currency and completeness of the information is subject to change. Your comments on any topics addressed in this newsletter or the website are welcomed. Please direct questions or comments to LCDR Mary Graves or Mr. Gerry Williams at (850) 452-7716 DSN: 922-7716.

# U.S. Navy Humanitarian Assistance in an Era of Austerity




Over the last decade, the U.S. Navy has gone beyond disaster response to substantially enlarge its scheduled, preplanned humanitarian engagements in the Pacific, the Americas, and Africa. After an expansionary period that began with the 2005 response to the Indian Ocean tsunami, intensifying budget pressures are now triggering spirited debate within the Department of Defense (DoD) about the true value of these "soft power" missions, which utilize scarce personnel, funding, and assets that otherwise would be dedicated to more traditional and more easily measured and justified "hard power" missions.

To help frame and inform this complex debate, the Center for Strategic and International Studies (CSSI) launched an independent study of U.S. Navy humanitarian assistance, focusing on U.S. health engagements in the Pacific involving both military and civilian agencies.

This report does not focus on the U.S. Navy response to natural disasters but rather on proactive humanitarian engagement missions planned in advance to bring health assistance, engineering and construction projects, medical training, and subject-matter expert exchanges to remote and austere areas. When complex and devastating emergencies arise unforeseen, the U.S. military will inevitably use its exceptional lift, expertise, and other capacities to respond, as it did with the Indian Ocean tsunami and the 2010 earthquake in Haiti. But in a time of increasingly constrained defense budgets, the question is whether *planned* humanitarian assistance can and should be sustained. Click here to view the complete report.

# USS IWO JIMA Amphibious Ready Group (IWOARG)

The USS IWO JIMA Amphibious Ready Group (IWOARG) was deployed from 27 March 2012 until 20 December 2012 in support of 5th and 6th Fleets operations. The medical composition of IWOARG included the Medical Departments of USS IWO JIMA (LHD-7), USS NEW YORK (LPD-21), USS GUNSTON HALL (LSD-44), and Fleet Surgical Team FOUR (FST-4) that was embarked in USS IWO JIMA. This purpose of this AAR was to capture relevant medical observations based on experiences encountered during the deployment. Key lessons identified include:

- Requirement for multiple level II capabilities due to disaggregated operations
- Importance of an assigned mental health provider
- Efficient use of blood products
- Medical personnel need internet access while ARG is operating in a “River City” status
- All deployed personnel require a no fee passport
- Flight suits worn by LCAC personnel cannot be treated with permethrin, resulting in suboptimal vector-borne disease protection

Click here to view the complete After Action Report.

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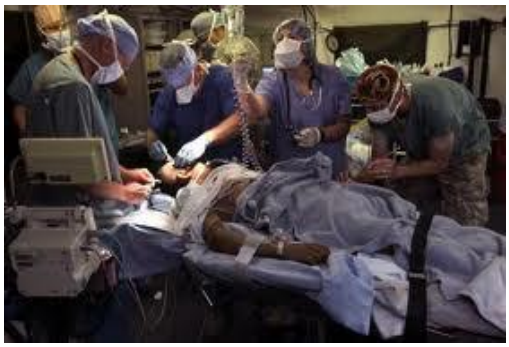
# Joint Theater Trauma System (JTTS) Updates Damage Control Resuscitation Clinical Practice Guideline



The Damage Control Resuscitation Clinical Practice Guideline (CPG) was updated in February, 2013 for level II and III treatment facilities. The goal of the CPG is to outline a method of trauma resuscitation in which fluids, blood products and other adjunctive measures, e.g., Tranexamic Acid and Recombinant Factor VIIa (rFVIIa), are used to reverse or prevent coagulopathy and aid in management of ongoing hemorrhage. The changes in this CPG are substantial and should be read in its entirety. All current CPGs are available for review by clicking here.

# Saving Lives on the Battlefield A Joint Trauma System Review of Pre-Hospital Trauma Care

Currently, if you are a U.S. or coalition casualty on the battlefield of Afghanistan and you arrive alive to a Role 3 Medical Treatment Facility (MTF), your chance of survival is greater than ninety eight percent. Although the overall case fatality rate in the ongoing conflict is lower in comparison to previous conflicts, significant challenges still remain. A comprehensive study of 4,596 U.S. combat fatalities incurred in Afghanistan and Iraq from 2001 to 2011 also found that 87% (4016/4596) of deaths occurred prior to reaching a MTF. This percentage remains relatively unchanged from the 88% noted from the Vietnam conflict. Additionally, of the pre-MTF fatalities, a panel of military medical experts determined that 24% (976/4016), or one in four of these deaths, were potentially preventable.

In an effort to address potentially preventable deaths, U.S. Central Command assembled and deployed a pre-hospital trauma care assessment team in November 2012 to review pre-hospital trauma care practices within the Combined Joint Operations Area – Afghanistan (CJOA-A). The overall goal of this assessment was to provide recommendations that will reduce preventable combat death among US, Coalition, and Afghan forces to the lowest incidence achievable. Three primary areas of focus include: 1) identify best practices that can be cross-leveled among the force, 2) identify actionable areas of performance improvement that will optimize pre-hospital trauma care timing, delivery, and casualty survivability, and 3) identify potential gaps in pre-hospital trauma care, data and performance improvement, tactical evacuation, personnel, training, equipment, medications, research, and technology that merit priority for advancement of pre-hospital trauma care delivery.

The final report identified over 260 observations collected form deployed pre-hospital providers, medical leaders, and combatant leaders from various U.S. military services as well as Coalition partners. As a result of the collection effort, 89 formal recommendations to reduce preventable combat deaths have been forwarded through the chain of command. The full report can be viewed by clicking here.

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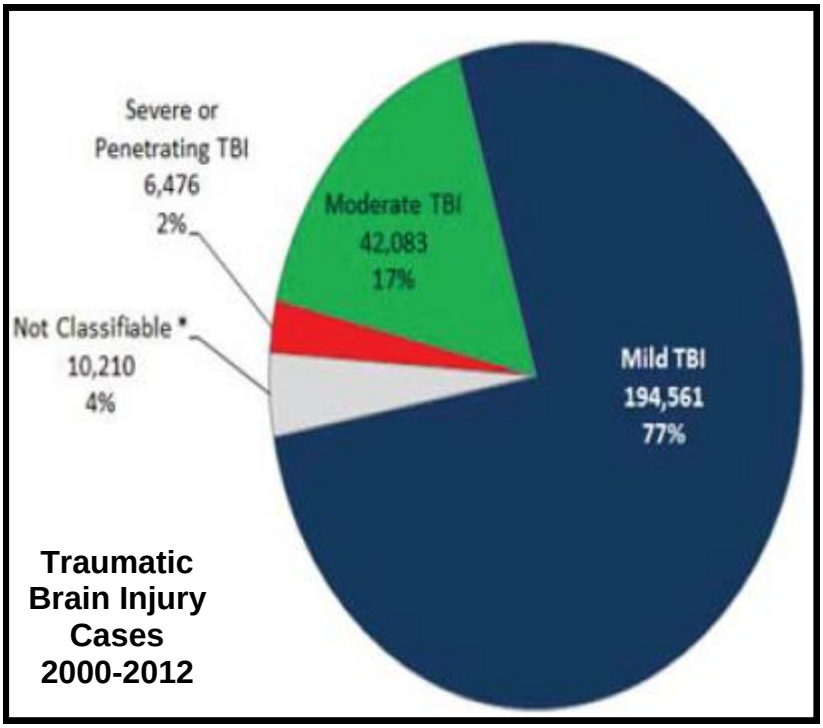
# The Congressional Research Service Report: U.S. Military Casualty Statistics

The Congressional Research Service has produced a report that provides multiple statistics regarding U.S. military casualties from Operation Enduring Freedom (OEF, Afghanistan), as well as operations that have ended: Operation New Dawn (OND, Iraq) and Operation Iraqi Freedom (OIF, Iraq). This report includes statistics on post-traumatic stress disorder (PTSD), traumatic brain injury (TBI), amputations, evacuations, and the demographics of casualties. Some of these statistics are publicly available at the Department of Defense's (DOD's) website, whereas others have been obtained through contact with experts at DOD. To view this report in its entirety, click here.

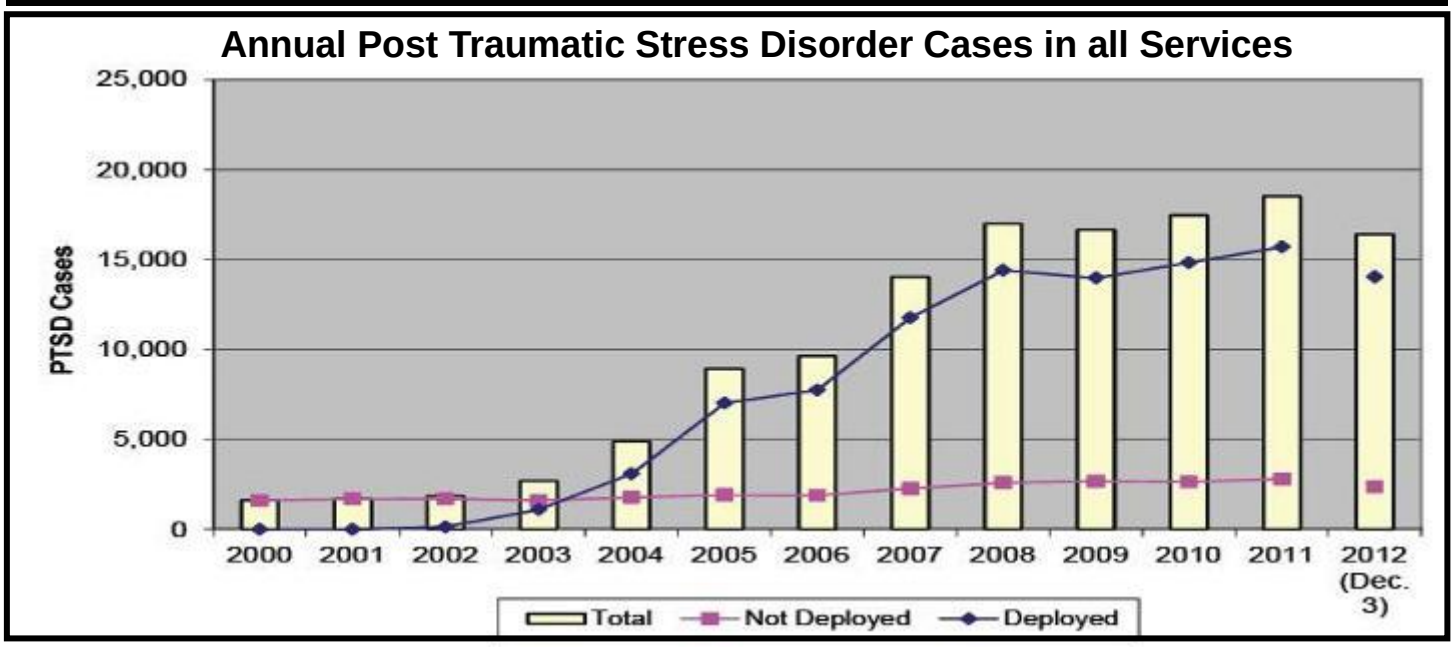



**Traumatic Brain Injury Cases 2000-2012**

**Table 1. Overall Casualties in OIF, OND, and OEF**

(as of February 5, 2013)

| | U.S. Servicemember Deaths | U.S. Department of Defense Civilian Deaths | U.S. Servicemembers Wounded in Action |
|---|---|---|---|
| Operation Iraqi Freedom[a] | 4,409 | 13 | 31,925 |
| Operation New Dawn[b] | 66 | 0 | 295 |
| Operation Enduring Freedom[c] | 2,165 | 3 | 18,230 |

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# Clinical Management of Military working Dogs

Military Working Dogs ((MWDs) are critical assets for military police, special operations units, and others operating in today's combat environment. Expectations are that injured working dogs will receive a high level of resuscitative care as far forward as possible, where the presence of trained Veterinarians or Animal Care Specialists is uncommon. In an effort to assist non-veterinary HCPs with general clinical guidance and treatment of MWDs, the Joint Trauma System (JTS) has developed Clinical Practice Guidelines for the Management of MWDs. These guidelines will assist in resuscitation and stabilization of life- and limb threatening conditions until evacuation is coordinated to a veterinary facility. Contents of the clinical management guideline include:

- Normal Clinical Parameters for Military Working Dogs
- Emergency Airway Management In Military Working Dogs
- Management of Penetrating Chest Wounds And Respiratory Distress In MWDs
- Cardiopulmonary Resuscitation (CPR) of Military Working Dogs
- Management of Shock In Military Working Dogs
- Management of Abdominal Trauma In Military Working Dogs
- Management of Gastric Dilatation-Volvulus Syndrome In Military Working Dogs
- Management of Environmental Injuries In Military Working Dogs
- Management of Long Bone Fractures In Military Working Dogs
- Wound Management In Military Working Dogs
- Management of Ocular Injuries In Military Working Dogs
- Analgesia and Anesthesia for Military Working Dogs
- Management of Traumatic Brain Injury (TBI) And Acute Spinal Cord Injury (ASCI) in MWDs
- Management of Canine Post Traumatic Stress Disorder-Like Syndrome
- Management of Training Aid Toxicoses In Military Working Dogs
- Euthanasia of Military Working Dogs
- After-Action Review of Military Working Dog Emergent Care

***Providers must note that emergent surgical management should be considered only if 1) the provider has the necessary advanced surgical training and experience, 2) the provider feels there is a reasonable likelihood of success, and 3) the provider has the necessary support staff, facilities, and monitoring and intensive care facilities to manage the post-operative MWD without compromising human patient care.***



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# Marine Corps after Action Reports

The **3d Battalion, 6th Marines After Action Report** provides observations, feedback, and lessons learned from the Battalion's support of the Weapons and Tactics Instructor course (WTI) that took place 20 September to 27 October 2012 at various training areas within Yuma Proving Grounds, Arizona. The following medical observations were identified during the training exercise: 1) Medical Coverage during live fire evolutions, 2) Insufficient Preventative supplies and equipment, and 3) Resupply of medications during WTI was difficult to ascertain.

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In May 2012 2d Battalion 10th Marines deployed to Helmand Province, Afghanistan to provide general support fire to 1st Marine division (FWD) within the Task Force Leatherneck Area of Operations and as the Security force for Camp Leatherneck, Camp Dwyer, and Camp Delaram II. Key medical observations collected from 11 May – 5 November, 2012 include the following: Medical support for the Security Force, inability to complete detailed physical exams, shortages of medical equipment and supplies, proper training on Military Acute Concussion Evaluations (MACE) and the Theater Medical Information Program (TMIP). To view all observations and the AARs, click here.

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The **3d Battalion, 8th Marines (-) Reinforced AAR** addresses observations collected from May through November 2012 while the battalion was assigned to support the Afghan National Security Forces (ANSF) operations in the Helmand Province, Afghanistan. Specific medical observations and recommendations were identified within the AAR, which include; 1) Medical equipment for providers, 2) Medical Rules of Eligibility, 3) TMIP, 4) Rabies mitigation of feral animals, 5) Withdrawal of ancillary medical service from AOR, and 6) Force protection. To view the detailed medical observations associated with this AAR, click here.

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Regimental Combat Team-6 (RCT-6) out of Camp Lejeune, N.C., retuned home after completing a 1 year deployment, in which they oversaw infantry operations in northern Helmand and Nimruz provinces, Afghanistan. Their primary mission was to develop the capabilities of the Afghan National Security Forces while destroying the insurgency, allowing the government of Afghanistan to more proactively govern the citizens of Afghanistan. The After Action report (AAR) produced from the deployment identified the following specific medical observations and recommendations:

- Compliance with Theater Medical Requirements (CENTCOM)
- Medical Force Distribution and Shortfalls Throughout
- Medical Rules of Eligibility (MRoE)
- Guards for MEDEVACD or Sick Detainees
- Supplemental Personnel Casualty Reports

Click here, to view the AAR and submitted observations.

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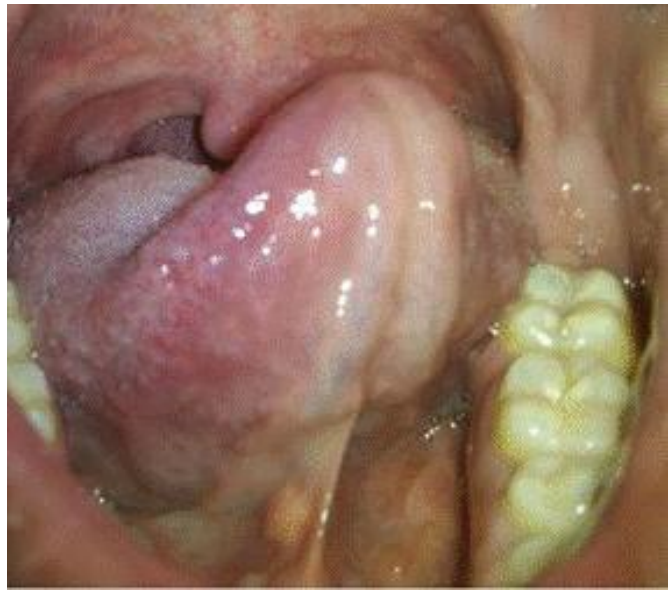
# Teleconsultation Program

The **Army Teleconsultations Program (ATP)** provides a teleconsultation system to support all deployed health care providers regardless of branch of service. It may be used to consult on any patient under the provider's care, including foreign nationals. Consults are answered seven days a week with a reply within 24 hours (average turn-around time is less than 6 hours). Last quarter there were 79 consultation requests for Navy and Marine Corps patients. Dermatology remains the most requested service, followed by Neurology, and Infectious Disease. Go to the NOMLLC Army Teleconsultation Site to learn more about the program and to view this quarter's teleconsultation summary.

The Army Teleconsultations Program not only assists deployed Navy healthcare professionals, but is supported by many Navy physicians in various consultations groups such as pediatric intensive care, dermatology, urology, nephrology, gastroenterology, hematology and cardiology. If you are a specialist and interested in supporting this valuable program, please contact Mr. Charles Lappan, Project Manager, Army Teleconsultation Program at chuck.lappan@us.army.mil.

**Deployed Providers Narration:** This is a 25 year old male that presented to the sick call with concerns over a "white spot" under his tongue that he noticed two days ago while brushing his teeth. As a previous smoker, he states he only noticed it about two days ago just based on visual inspection and has not experienced any other symptoms. He denies any fevers, chills, night sweats, rapid weight loss/gain, pain with chewing/ eating, bleeding, drainage, skin changes, dry mouth or any other oral lesions. Normal vitals and exam with a 5 mm pearly white superficial submucosal mass just to the right of the sublingual frenulum.



I'm not sure if it is a simple cyst or something else. It didn't appear to be sialolithaisis or if a dental consult needed to be ASAP vs watch and wait. Any advise would be greatly appreciated.

**Dental Consultant's Recommendation (Reply time 36 mins):** Based on the clinical image provided and reported clinical history, I favor a lymphoepithelial cyst. The location and clinical appearance is spot-on for a lymphoepithelial cyst. A lipoma or sialolith are additionally considered. If this is a lymphoepithelial cyst or, less likely, a lipoma the lesion would have a soft/fluctuant consistency. If this is a sialolith, it would feel calcified. Simple palpation should be able to differentiate a sialolith from a lymphoepithelial cyst or lipoma. Alternatively, a mandibular occlusal dental radiograph with a decreased kVp should be able to detect a floor of mouth calcification (sialolith) if dental support is available. Ideally an excisonal biopsy should be performed. However as this lesion appears clinically benign a biopsy can be deferred until after deployment if needed.

The ATP is proud to announce the availability of **Pain Management Teleconsultations**. Consultants from the Walter Reed National Military Medical Center have agreed to provide teleconsultations involving patients with chronic or severe pain, such as low back pain, neck pain, extremity pain, and opioid concerns. To use this service please send all consults to pain.painmanagement@us.army.mil.

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# Armed Forces Medical Examiner: Feed Back to the Field #13

AFMES
Armed Forces Medical Examiner System

In this sample, 11 of 136 (8%) carried (unused) CATS were improperly prepared with double slit routing

The Armed Forces Medical Examiner System (AFMES) recently distributed "Feedback to the Field" (FT2F) #13. FT2F's are reports designed to aid deployed personnel, trainers, first responders, and ultimately increase casualty survivability. FT2F #13 is based on data collected at Dover Port Mortuary in September 2012 and confirmed in a recent AFMES evaluation. FT2F #13 provides information on Combat Application Tourniquets (CATS) that were improperly prepared or modified in the theater of operations. FT2F #13 is available by clicking here. Additional FT2F's are available for download via the DMMPO Joint Medical Test & Evaluation (JMT&E) Resources website.

# Combat Casualty Care Lessons Learned from OEF and OIF


**Combat Casualty Care: Lessons Learned from OEF and OIF (2012)**: This book is designed to deliver combat casualty care information that will facilitate transition from a CONUS or civilian practice to the combat care environment. Establishment of the Joint Theater Trauma System (JTTS) and the Joint Theater Trauma Registry (JTTR), coupled with the efforts of the authors, has resulted in the creation of the most comprehensive, evidence-based depiction of the latest advances in combat casualty care. Lessons learned in Operation Enduring Freedom (OEF) and in Operation Iraqi Freedom (OIF) have been fortified with evidence-based recommendations with the intent of improving casualty care. The chapters specifically discuss the differences between combat casualty care and civilian sector care, particularly in the scheme of "echelonized" care. Overall, the educational curriculum was designed to address the leading causes of preventable death and disability in OEF and OIF. Specifically, the generalist provider is presented requisite information for optimal care of US combat casualties in the first 72 to 96 hours after injury. The specialist provider is afforded similar information, which is supplemented by lessons learned for definitive care of host nation patients. This information provides an excellent supplement to predeployment combat casualty care training and education.

# USAFRICOM Updates Malaria Chemoprophylaxis Requirements

U.S. Africa Command (USAFRICOM) released a message (DTG 051453Z MAR 13) which notifies of a change in USAFRICOM malaria chemoprophylaxis recommendations for all DoD personnel traveling or deploying to Camp Lemonier and/or Djibouti City, Djibouti. Recently acquired information indicates that the malaria transmission risk for this area may have changed or increased. Until more is known, the AFCRICOM command surgeon now recommends malaria chemoprophylaxis for low-transmission risk areas within the continent of Africa. The recommended chemoprophylaxis is Doxycycline or Atovaquone-Proguaniul (Malarone) which are acceptable first-line prophylactic medications. Mefloquine should be reserved for individuals with intolerance or contraindications to both first-line medications.

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# Regimental Combat Team 7: 100 Day After Action Report

Regimental Combat Team 7's (RCT-7) is currently serving in Afghanistan and like most Marine Corps units that serve one year tours, they submit an After Action Report every 100 days they are deployed. This First 100 Days Report from RCT-7 covers the period from 25 October 2012 to 03 February 2013 and includes the most current information on concerns in theater. Medical information extracted form the report is highlighted below:

**Point of Injury Care (Non-compliance with TCCC Guidelines):**

- Patients are being evacuated with improper tourniquet application
- Improper use of Normal Saline /Lactated Ringers for the treatment of shock
- Rigid eye shields are often not being used for obvious or suspected eye wounds

**Force Health Protection:**

- Rabies, malaria, and environmental exposures/injuries continue to pose a significant health risk to deployed personnel
- As a result of the recent draw down, units are deploying with fewer preventive medicine technicians or corpsmen trained in preventive medicine leading to less frequent base inspections.

**Mild Traumatic Brain Injuries (mTBI):**

- Concussions continue to be the most common battle-related injury
- Due to lack of training or reluctance of service members to report blast exposures or symptoms, mTBI is still under diagnosed
- Theater policy for mTBI is not being followed

**Corpsmen Medical Bags:**

- On multiple occasions, corpsmen deploying with smaller units (advisory and liaison teams) have arrived in theater without appropriate, and in some cases, no personal medical bags.

**Psychiatric Medication Management:**

- Oscar teams has no protocol in place for psychiatric medication

# Operation Enduring Freedom Drawdown

The drawdown in Afghanistan will follow a strict plan to ensure the safety of our troops is the highest priority. As redeployment progresses in theater a few things need to be thought out. How do we continue treat casualties as medical equipment and supplies ship out? How do you shut down Preventive Medicine services in theater? What happens to the "Golden Hour" standard of medical care? During retrograde, what do you do with Class VIII supplies? These are just a few issues that will need to be addressed during the withdrawal process.

The Medical Lessons Learned Center has collecting information concerning Redeployment from Operations (RFO) and placed it in specific binder on the website. Follow the link above to view information on the current drawdown activities in Afghanistan, as well as observations from previous drawdown events in Iraq.

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# Defense Health Board Recommendations for Battlefield Medical Research Priorities

The Defense Health Board (DHB) submitted an updated report to the Assistant Secretary of Defense (Health Affairs) on December 20, 2012 with a list of high-priority battlefield medical research, development, test and evaluation (RDT&E) issues relating to battlefield trauma care. The Board believes that research conducted to support the U.S. military should focus on issues that possess the greatest potential benefit for U.S. casualties. Since the greatest percentage of fatalities occur during the pre-hospital phase of care, this should be an area of increased research emphasis. The items contained on the list below represent the priorities that the DHB believes offer the greatest return on investment for Combat Casualty Care RDT&E.

- Unit-based pre-hospital trauma registries
- FDA-approved freeze-dried blood products (such as plasma and platelets)
- Clinicopathological review of every U.S. combat fatality, including preventable death analyses from combat units
- Development and testing of non-compressible torso and junctional hemorrhage control devices
- Optimized airway devices and training
- Optimal fluid resuscitation for casualties with TBI and shock
- Training and evaluation methods for TCCC skills
- Impact of TCCC interventions in preventing PTSD and TBI, including the role of analgesia in preventing PTSD
- Combat casualty care monitoring devices
- Impact of TACEVAC provider level and skill sets on survival (prospective studies)

The report advises the Department to endorse the above prioritized medical RDT&E issues and forward them to the Deputy Assistant Secretary of Defense (Force Health Protection and Readiness) and Service Surgeon Generals for consideration as high priority RDT&E efforts that will improve battlefield trauma care. The Board also recommends the Department track the research regarding these priority issues and provide regular updates concerning their status to the DHB. To view the report, click here.

# Committee on Tactical Combat Causality Care Realignment

The Committee on Tactical Combat Casualty Care (CoTCCC) has been moved from the Defense Health Board to the Joint Trauma System (JTS) at the U.S. Army Institute of Surgical Research. This move was requested by the CoTCCC and is effective immediately. The purpose of the move is to allow better interaction between the committee and the JTS - the DoD's premier trauma organization. The CoTCCC will maintain its close relationship with the Defense Health Board Trauma and Injury subcommittee. Click here to view the Acting Undersecretary of Defense for Personnel and Readiness memo dated 21 February 2013.

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# A Decade of Naval Medical Lessons Learned

In 2002, the commanding officer of what was at that time, the Naval Operational Medicine Institute was tasked by the Bureau of Medicine and Surgery (BUMED) to establish a medical-specific lessons learned center to capture the lessons that were lost, relearned, or forgotten. Soon after in 2003, the Naval Operational Medical Lessons Learned Center (NOMLLC) was officially chartered.

Prior to the establishment of NOMLLC, key medical observations obtained at the tactical level were lost and rarely submitted up through the operational chain. As individuals turned over and units dissolved, key information on medical issues disappeared, forcing the next set of deployers to constantly re-invent the wheel.

> ***"We are concerned that there is no systematic plan to ensure that the medical lessons learned will be passed on to those who could most benefit from them to save lives in a potential future attack."***
>
> **-From the USS COLE medical after action report dated 2001**

During the last decade Navy Medicine personnel have provided operational forces with high quality healthcare under the most arduous conditions imaginable. Navy Medicine's doctors, nurses, and corpsmen have played a pivotal role in the survivability of the war-fighter. One of the key reasons for Navy Medicines successes on the battlefield is a result of information sharing and having that information readily available for medical personnel to review prior to deployment.

Capturing Naval Operational Medical Lessons Learned and providing that information through its web portal is the mission of NOMLLC. This function is a key step in driving changes within Health Service Support. The center and the web portal are now linked to multiple Service Agencies and provides input directly to BUMED concerning the identification of issues and recommendations for changes. The box below identifies some of the key information collected and disseminated by NOMLLC over the last ten years.

- USS COLE Medical After Action Report
- First Health Service Support Lessons Learned Conference
- Hurricane Katrina
- New Gear for Corpsmen
- Changes to Combat Casualty Care
- Health Service Support Afloat
- Operation Unified Response
- Vanguard Medical Research / Development
- Operation Tomodachi
- USS ENTERPRISE Final Cruise Report
- Indonesia Earthquake Relief
- Training Requirements ISO of OEF

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